hp LaserJet printer product update

Introduction

Several new and exciting HP LaserJet products have been introduced over the past few months. These products have been well received and despite the worldwide sluggish economy, HP LaserJet sales have been good. Your commitment and ongoing efforts are vital to ensuring the continued success of these products.

This newsletter introduces you to new products, keeps you up-to-date on current product issues, highlights helpful tools and training opportunities, and provides technical information that you can use. Please let us know if you enjoy the information presented here and wish to receive more information like this in the future.

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Don't forget to visit the new TechWeb at: http://techweb.boi.hp.com/

Printer driver and firmware update notifications

In our busy world, with so many products to support, it becomes more and more difficult to keep up with the latest versions of printer drivers and firmware. Product firmware can change as often as *every three months*. That's why HP created the Proactive Notification Tool, which can send product update alerts straight to your e-mail.

You may customize the alerts so that you receive update notifications for only the specific products you support. For example, if you only wish to receive notifications for mid-range HP Color LaserJet printer products, you may enter only these products into your support alert profile. Alerts may be scheduled so that you receive them weekly or monthly.

To access this feature, go to http://www.hp.com and click **support & drivers**, **sign up for drivers and support alerts**, and then **driver & support alerts/notifications**.

We hope you take advantage of this helpful tool!

1. Choose your products
Product Category
Product Family
2. To add a product, click on the product name and then click the "add product" button or just double-click on the product you wish to add.
Products
3. To remove a product, click on a product in the window above and then click the "remove product" button above or just double-click on the product you wish to remove. When you are satisfied with the products that appear in the "my products" window, click on the "submit" button below
My Products

This screen shows how you may customize the tool to send notifications for only the products you specifically request.

support & drivers
All the tools and resources to support your products.
support & drivers
» HP software and drivers
» HP driver downloads, software updates and patches
» HP technical support
Get help for all HP products
get assistance for...
» HP driver downloads, software updates and patches
» sign up for drivers and support alerts
support alerts
newsletters
» subscribe now
business/IT
» business customers and IT professionals
Receive personalized technology news, product alerts, support, and driver information, specifically for IT and business professionals
» driver & support alerts/notifications
» recent driver updates (last 30 days)
» e-reports
» free online classes

Training opportunities

Do you want to learn more about our products but aren't sure where to find the training you need? There are several ways to access HP LaserJet training.

Parts Direct Ordering

Service and Support CDs can be ordered from HP Parts Direct Ordering (https://partsdirect.hp.com). These CDs contain computer or Web-based training modules as well as user documentation and service manuals.

Learning Utility

The Learning Utility is an HP internal Web site where you can find Web-based training modules, as well as some instructor-led training. The following servers are available:

- **Americas:** http://learning1.americas.cpqcorp.net
- **EMEA:** http://learning2.emea.cpqcorp.net
- **A/P:** http://learning4.asiapac.hp.com

Learning Center

For our external partners, a new training site called the Learning Center is being established. It will make Web-based training modules available to partners outside the HP firewall.

- **Log-in page:** http://vsslfpro.compaq.com/plm/
- **Directions for obtaining an account:** http://vsslfpro.zcce.compaq.com/Plm/contact/index.html

Since both the Learning Utility and the Learning Center are new HP sites (formerly Compaq sites), new courses are still being added. Current courses were available first, and legacy courses are being added almost daily.

Product/course name	CD part number	Learning Utility course number	Learning Center path to each course (select Available Courses, view Grouped by Subject)
LaserJet Fundamentals	H8989-60101	coming soon	Select **Printers–LaserJet** and scroll to course
Elements of LaserJet Fundamentals	5851-1533	E9-10287-WB	Select **Printers–Imaging/Print Technology** and scroll to course
HP LaserJet 1150/1300	Q1334-60106 (available May 2003)	2405 – Web-based 2403 – Instructor-led	Select **Printers–LaserJet** and scroll to course
HP LaserJet 1200/1220	C7044-60107	EWDE22LJ1200	Select **Printers–LaserJet** and scroll to course
HP LaserJet 2300	Q2472-60110 (available May 2003)	757 – Web-based 756 – Instructor-led	Select **Printers–LaserJet** and scroll to course
HP LaserJet 2500 & 1500	Q2488-60105 (available May 2003)	4530 – Web-based 4531 – Instructor-led	Select **Printers–LaserJet** and scroll to course
HP LaserJet 3300mfp	C9124-60129	EWDE22LJ3300MFPW	Select **Printers–LaserJet** and scroll to course
HP LaserJet 4100mfp	C9148-60107	coming soon	Select **Printers–LaserJet** and scroll to course
HP LaserJet 4200/4300	Q2431-67901	EWDB224200-4300W	Select **Printers–LaserJet** and scroll to course
HP LaserJet 4600/5500	C9656-60105	EWDE22CLJ4600W	Select **Printers–LaserJet** and scroll to course
HP LaserJet 9000	C8519-67909	4393	Select **Printers–LaserJet** and scroll to course
HP LaserJet 9000mfp	C8523-60110	EWDE22LJ9000MFPW	Select **Printers–LaserJet** and scroll to course

Introducing the new HP LaserJet 2300 printer

On April 2, HP introduced the HP LaserJet 2300 series printer, replacing the HP LaserJet 2200 printer line. The increased speed (up to 25 ppm letter), two-line control panel display, additional memory, and enhanced EIO capabilities make this printer shine. The suggested list price is very similar to the HP LaserJet 2200 family. A one-year, return-to-bench warranty is standard on all models.

Additional drivers, updated drivers, and other valuable software for the HP LaserJet 2300 series printer is available on the HP Customer Care Web site at: http://www.hp.com/support/lj2300.

Reliable desktop laser printing for business professionals and small workteams

Configurations	2300L	2300	2300n	2300d	2300dn	2300dtn
Part number	Q2477A	Q2472A	Q2473A	Q2474A	Q2475A	Q2476A
Print speed, letter **Print speed, A4**	20 ppm 19 ppm	25 ppm 24 ppm	25 ppm 24 ppm	25 ppm 24 ppm	25 ppm 24 ppm	25 ppm 24 ppm
Memory[1]	32 MB RAM, expandable to 288 MB	32 MB RAM, expandable to 288 MB	48 MB RAM, expandable to 304 MB	48 MB RAM, expandable to 304 MB	48 MB RAM, expandable to 304 MB	48 MB RAM, expandable to 304 MB
Parallel and USB	standard	standard	standard	standard	standard	standard
HP Jetdirect 615n EIO print server	optional	optional	standard	optional	standard	standard
Embedded Web server	optional[2]	optional[3]	standard	optional[3]	standard	standard
Automatic duplexer	not available	not available	not available	built-in	built-in	built-in
250-sheet paper tray	standard	standard	standard	standard	standard	standard
500-sheet paper tray	optional	optional	optional	optional	optional	standard

[1] Two DIMM slots available on each model
[2] Requires at least 48 MB of RAM and an HP Jetdirect print server
[3] Requires an HP Jetdirect print server

Firmware DIMM distinctions

The HP LaserJet 2300 firmware DIMMs are specific to printer models. It is critical that a faulty DIMM be replaced with the proper DIMM in order to retain functionality of that specific model. The following table shows the DIMM for each model.

Model	DIMM label	Part number
HP LaserJet 2300L	32L	Q2651-67902
HP LaserJet 2300	32S	Q2651-67903
HP LaserJet 2300n	48S	Q2677-67902
HP LaserJet 2300d	48D	Q2677-67903
HP LaserJet 2300dn	48D	Q2677-67903
HP LaserJet 2300dtn	48D	Q2677-67903

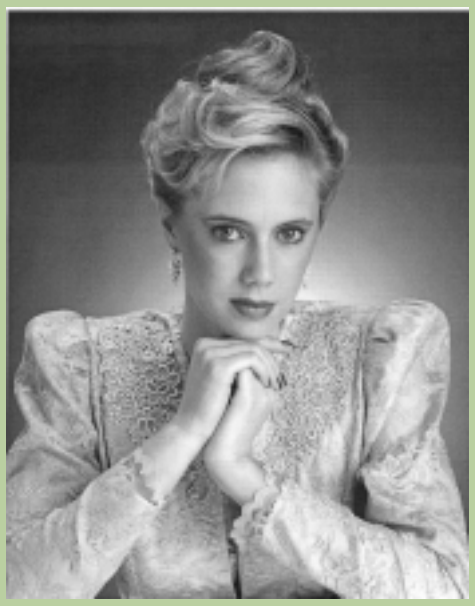
Accessories and supplies

The following table lists part numbers for some of the HP LaserJet 2300 series printer accessories and supplies.

Description	Part number
250-sheet tray and feeder unit	C4793-67901
500-sheet tray and feeder unit	C7065-67901
Service manual	Q2472-90908
Service and support CD	Q2472-60110
6,000-page print cartridge	Q2610-60001

Issues with the HP LaserJet 2300 printer

HP LaserJet 2300 issue	Description	Solution or workaround (Click the link to view the full TechWeb document.)
Tray 3 letter support out of place	When a customer removes the shipping tape from Tray 3, it is possible that they will pull the letter support out of place, which may cause mis-picks.	To solve this problem, put the letter support back into place. TechWeb document: LJ2300 Tray 3 Mis-picks
41.3 unexpected paper size	Since the HP LaserJet 2300 printer does not have paper size sensors in the trays, the customer must load the correct paper size in the trays and properly configure the tray size setting via the control panel. Customers experience this error when they send a print job with a specific paper size to a tray configured for a different paper size.	Make sure that the tray size is configured correctly and that the job being sent is the same size as the tray, or set the tray paper size to ANY. TechWeb document: 41.3 Unexpected Paper Size

HP LaserJet 2300 issue	Description	Solution or workaround (Click the link to view the full TechWeb document.)
13.5 or 13.6 short media paper jam	Shorter media (such as 3 x 5 inch cards) may cause this paper jam, especially if the media is warped and interfering with the fuser nip.	Turn over the media in the tray, or use media that is not warped. TechWeb document: 13.5 or 13.6 Short Media Paper Jams
Developer ghosting on early print cartridges	Developer ghosting is a phenomenon noticed in early cartridges for the HP LaserJet 2300 and 2300L printers. It is most evident on images that have a solid or gradient fill after the margin at the top of the image. The top approximately 47 millimeters of the image fill area will be darker than the rest of the fill area. It is no coincidence that 47 millimeters is the circumference of the developer roller. This defect is most noticeable in low humidity environments.	Over-charged toner on the developer causes this problem. Approximately 7,000 cartridges were shipped before a counter-measure was implemented. Customers who purchased some of these early cartridges may see this defect. If a customer complains of this issue, their cartridge should be replaced with the latest version print cartridge.  TechWeb document: Developer Ghosting
White specks or spots appear on dark or black backgrounds	White specks or spots may appear on dark or black backgrounds when printing from a variety of applications. Also, dark specks can occur on gray backgrounds. Possible causes include: • Adhesive from labels or envelopes may be stuck to the OPC drum. This may attract toner to the OPC drum and will not allow the toner to be transferred to the page during printing. • Paper particles from some paper types may be sticking to the OPC drum causing contamination that will not allow toner to be attracted to the OPC drum during the printing process.	If you can see toner particles or paper dust stuck to the print cartridge OPC drum, replace the print cartridge. Change the media to another brand or type (such as HP media) to keep this from happening in the future. (Labels without rounded corners are more likely to peel, causing jams and problems with print quality.) Consult the paper specification guide for more information about supported paper types for the HP LaserJet 2300 series printer. You can obtain the guide on the HP Web site at: http://www.hp.com/support/ljpaperguide. TechWeb document: OPC Contamination

HP LaserJet 2300 issue	Description	Solution or workaround (Click the link to view the full TechWeb document.)
Slow display on cold printers	When new printers are first powered up, text on the control panel display may overlap for up to one second (previous text is visible when new text is shown). This is seen early in product life but seems to disappear as the unit is used or warmed up. This can also happen to the printer any time it is exposed to temperatures colder than 3° C or 38° F for an extended period of time.	This problem can be solved by warming up the entire printer to room temperature. TechWeb document: Slow Display
Display has no back light	Customers may notice that they have characters on their control panel display but no back light.	Make sure the purple connector is firmly attached to the formatter board and the control panel. TechWeb document: LJ2300 Display Panel has No Back Light
Microsoft Excel clicking noise	Excel spreadsheets may make excessive noise as they are printed. This is due to the line spacing and width of the lines used in the spreadsheet.	To reduce this noise, try to have varying distances between the lines and make the lines a bit thicker. TechWeb document: Noises Customers May Hear
Printer makes a sound approximately 30 seconds after the last job is printed	The printer will rotate the fuser about ¼ of a turn approximately 30 seconds after the last print job is printed. This rotation prevents the fuser from forming a flat spot due to the pressure and heat right after printing.	This is a normal action and needs no workaround. TechWeb document: Noises Customers May Hear

HP LaserJet 2300 issue	Description	Solution or workaround (Click the link to view the full TechWeb document.)
Transfer roller squeak	Both the bushings and the transfer roller can cause a squeaking noise.	To eliminate the squeak, replace both bushings and the transfer roller (p/n: RM1-0338-000CN for the transfer roller assembly, which includes the left bushing, and p/n: RC1-0922-000CN for the right bushing). TechWeb document: Noises
Fuser idler rollers squeak	Fuser idler rollers may squeak.	Replace the fuser (p/n: RM1-0354-000Cn for 110V and p/n: RM1-0355-000CN for 220V). TechWeb document: Noises
Corrupted square wave power can cause a hard fail (50.3)	Customers using square wave power may experience a hard fail in the printer (for example, a backup power source that generates square wave ac current, such as solar cells or wind turbines, connected to a square wave inverter). A 50.3 error may appear.	Power cycle the printer. If the printer does not power up correctly, then replace the fuser. Square wave power sources are not recommended for the HP LaserJet 2300 series printer. TechWeb document: Low Level Transient Errors
49 service error, 62 error, or printer hangs during boot	There are a limited number of HP LaserJet 2300 and 2300L printers shipped to customers that may experience 49 service errors, 62 errors, or hanging during printer boot. The main cause is an issue with the memory bus when using firmware DIMMs with SDRAM vendors other than Micron.	If your customer experiences this problem, determine whether the SDRAM chip on the firmware DIMM is a Micron chip. For more information, see the TechWeb document below. TechWeb document: Service Notes If you are unable to use the hyperlink above, you can obtain this Service Note by going to the following URL: http://snserver.mayfield.hp.com/ServiceNotes/Snwebsite/default.asp From the Service Note home page, click on **Search by Service Note Number**, enter **3207**, and then click **SEARCH**.

EconoMode in the HP LaserJet 2300 printer

What is it?

EconoMode is a feature provided in HP LaserJet printers that allows the printer to use less toner on each page. Selecting this option will extend the life of the toner supply and will reduce the cost-per-page. However, it will also reduce print quality. For example, if you print a black square using EconoMode, the square appears gray when printed.

How does it work?

EconoMode may be turned on or off through the printer's control panel, but it is best to turn EconoMode on or off from the printer driver or a software program because these settings override the control panel settings.

HP does not recommend full-time use of EconoMode. If EconoMode is used full-time when the average

HP does not recommend full-time use of EconoMode.

toner coverage is significantly less than five percent, it is possible that the toner supply will outlast the mechanical parts in the toner cartridge. If print quality begins to degrade under these circumstances, the customer will need to install a new print cartridge, even if there is toner remaining in the cartridge.

How does EconoMode in the HP LaserJet 2300 differ from the HP LaserJet 2200?

When EconoMode is turned ON in the HP LaserJet 2300 printer, the print quality will appear lighter than a page printed with EconoMode turned ON in the HP LaserJet 2200. On the HP LaserJet 2200, it was difficult to distinguish print quality differences between EconoMode ON and OFF.

Customers complained about this lack of distinction and were skeptical that they were actually using less toner with EconoMode ON. In the HP LaserJet 2300, there is a clear print quality difference between EconoMode ON and OFF.

What are the workarounds for improved print quality?

Verbal Use Only!
The following information should be shared only with customers who complain about the level of print quality on the HP LaserJet 2300 with ECONOMODE = ON. HP recommends strategy #1 below to correct this problem. If the customer is extremely upset and absolutely wants the EconoMode print quality of the HP LaserJet 2200, you may share strategy #2.

The following strategies may be implemented for customers who want to improve the print quality in EconoMode:

#1 With ECONOMODE=ON, increase the TONER DENSITY setting in the Print Quality Menu. Toner density controls the lightness or darkness of the print on a page. The settings range from 1 (light) to 5 (dark). The default setting is 3. The customer may increase the setting to 4 or 5 to darken the print output. These settings will consume more toner than the default setting of 3.

#2 Set ECONOMODE=OFF in the Print Quality Menu. This will return the printer to a state where the full amount of toner is used to print and will eliminate any toner savings gained by EconoMode. The user may decrease the TONER DENSITY value in the Print Quality Menu to 1 or 2 to consume a little less toner than the default setting of 3.

HP LaserJet 4200/4300 updates

New firmware

Firmware datecode 20030131 04.007.3

The latest HP LaserJet 4200/4300 printer firmware was released on February 28, 2003. The firmware datecode is 20030131 04.007.3.

The HP LaserJet 4200/4300 has remote firmware upgrade (RFU) capability (e.g., Flash firmware). To obtain a new firmware image go to: http://www.hp.com/go/lj4200_firmware or http://www.hp.com/go/lj4300_firmware.

Note The firmware images are unique for each product; they cannot be shared.

The new firmware image must then be copied to the printer. The README file included with the firmware image provides instructions for copying the files to the printer.

The following improvements were implemented with firmware 04.007.3:

- Blank page suppression ignores the form feed (FF) command from a legacy application.
- After 30 power-save cycles with a Stapler/Stacker installed, a 49.xx error occurred. These 49 errors have been eliminated.
- Secure third-party control panel solutions would not be hidden from the embedded Web server. This has been corrected.
- Third-party DIMMs with a newer file structure might cause the printer to crash. A fix to prevent this was implemented.
- Some files that contained HPGL/2 to generate an image would produce a black box instead of the desired image. This has been corrected.
- Improvements were made to handle certain types of banner pages correctly.
- Additional fonts have been added.

- The “Replace Fuser Kit” message would not clear after replacing the fuser. This has been corrected.
- Certain print jobs would clip images on A4 paper. This has been corrected.
- PostScript imaging has been improved.
- Some localized language messages on the control panel had not been correctly translated. They have been corrected.
- Several PostScript enhancements have been added for performance improvements.
- Performance has been improved on large volume jobs.
- Customers using custom font DIMM solutions might see PCL code instead of the literal font name. This has been corrected.
- Some third-party applications printed fonts incorrectly. This has been corrected.
- Localized language messages for “supplies installed” and “cartridge installed” have been updated.

Paper pickup assembly 13.x or 60.x errors

The call center has noted customer calls reporting DOA units because of a pickup assembly defect in either Tray 2 or the optional 500-sheet feeder, where the feed roller shaft is not engaged properly due to a missing/fallen bushing and gear. The printer will report a 13.x jam or a 60.x tray lifter error.

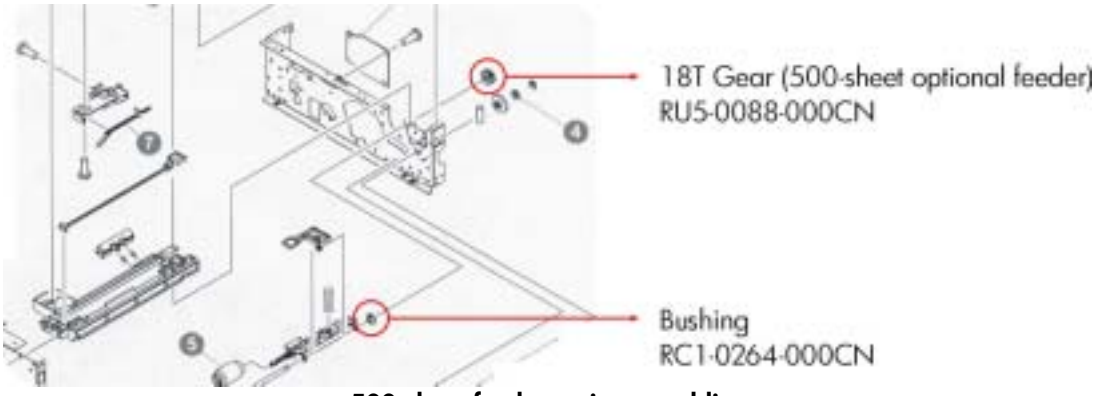
Note There are currently a couple of different causes behind a 60.x error. To determine if the 60.x error is related to this paper pickup assembly issue, take the tray out and tug the feed roller/feeder shaft to the left. If it falls out of place, it is in fact a pickup assembly problem.

HP Technical Marketing is setting up three part numbers as service parts due to field failures resulting in whole unit and optional 500-sheet feeder replacements.

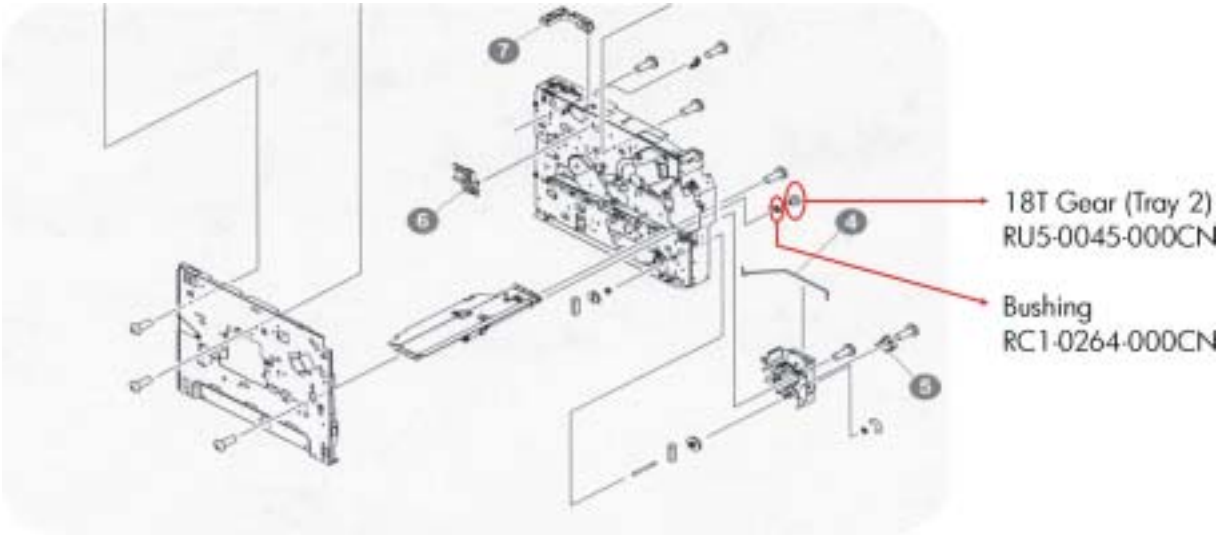
Gear 18 Tooth (Tray 2)	RU5-0045-000CN
Gear 18 Tooth (500-sheet feeder)	RU5-0088-000CN
Bushing Feed Shaft	RC1-0264-000CN

Your feedback is requested

Please enter the specific Issue Path and note the serial number on defective printers. Also, provide a detailed description of related error codes and symptoms the customer is experiencing.



500-sheet feeder main assemblies



Main assemblies

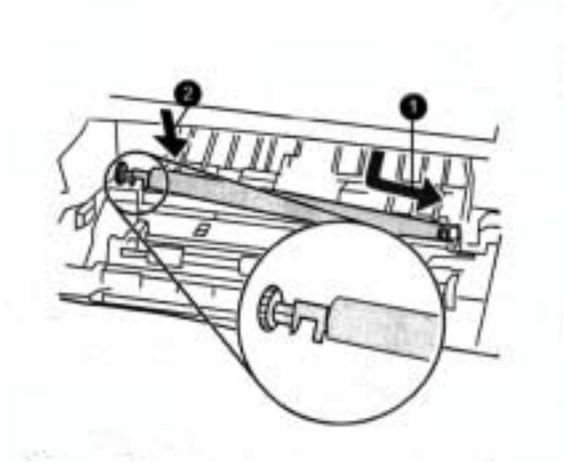
Transfer roller dislodged

Several customers in North America and in Europe have noted that the transfer roller in the HP LaserJet 4200/4300 series printer is loose or dislodged upon opening the box. The transfer roller may be dislodged during shipment. The precise reason for the unseated transfer rollers is not known at this time, but manufacturing is appraising the situation.

Symptoms include the following:

- 54.1 control panel error
- An "Install Cartridge" control panel message is displayed although the cartridge has been installed in the printer
- Difficulty closing the cartridge door
- Printing blank pages
- Light print

To solve this problem, open the top cover, remove the print cartridge, and check the transfer roller. If it is loose or dislodged, re-seat the roller by snapping the left side near the blue gear into place.



Re-seating the transfer roller

Caution!
Do not touch the black rubber on the roller. Skin oils can cause print-quality problems. Also, make sure that the black collar on the left side is oriented with the solid end facing up (open end should face down).

Your feedback is requested

When unpacking the printer, please note whether the packing foam that secures the transfer roller is out of place. If so, please note whether it is loose or broken and escalate the matter to your divisional contact.

HP LaserJet 5100 updates

New firmware

The current configuration of the HP LaserJet 5100 printer allows for RFU (Remote Firmware Upgrade) capability (e.g., Flash firmware). This capability may or may not be available in future builds of the product. To obtain a firmware image go to: http://www.hp.com/go/lj5100_firmware.

The new firmware image must then be copied to the printer. The README file included with the firmware image provides instructions for copying the files to the printer.

The following table shows a product history of the HP LaserJet 5100 printer firmware.

Firmware revision	Firmware datecode	Fixes
MB8.09	20020213	Product introduction
MB8.12	20020311	Tray 1 performance issues
MB8.13	20020716	• Configuration of RAM disk using base memory • Correcting PS errors when certain PDF files were printed • Correcting cross-hatch graphics
MB8.18	20030205	• Preventing 41.3 Unexpected Paper Size when printing custom size paper • Preventing 79.00FE crash when PS files are printed • Fixing control panel garbage display in Japanese • Allowing paper to be removed from Tray 1 after job has started without causing printer to hang in processing job status

Note This latest firmware revision will be available May 15, 2003.

41.5 media feed error

If you experience a 41.5 Media Feed Error with the HP LaserJet 5100 printer, follow the steps below:

1. Check for correct operation of PS402 (top-of-page sensor) and PS403 (registration sensor) flags.
2. Paper might be arriving too soon at the registration sensor (PS403). Check for correct operation of the feed roller clutch (CL406) and replace it, if necessary.
3. If necessary, replace the dc controller.

Squeaking toner cartridges

Some customers have experienced a high-pitched, squealing sound when printing to the HP LaserJet 5100 printer. The source of this noise is attributed to the ac bias voltages applied to the primary charge roller inside the print cartridge. Some customers are very sensitive to this squealing sound. Counter-measure cartridges have been developed to minimize this noise. Replace the C4129X print cartridge with a new one with a date code of 2K01XXX or later.

Squeaking toner cartridges, continued . . .

Date code on the cartridge box

Date code on the print cartridge

Service manual corrections and additions

Please make the following corrections and additions to your HP LaserJet 5000 and 5100 service manuals.

Description	Incorrect information	Correct information
HP LaserJet 5000 service manual Table 8-7 on page 8-14 and page 8-51	Paper Feed Clutch: RH7-5192-000CN	Paper Feed Clutch: RH7-5191-000CN
HP LaserJet 5000 service manual Table 8-8 (Fig 8-6) on page 8-18 and page 8-51	Figure 8-6 shows the registration clutch (middle-bottom), but no number and there is also no entry on page 8-51	Registration Clutch: RH7-5192-000CN
HP LaserJet 5100 service manual Item 30, page 266	RH7-5345-000CN described as "Clutch, registration"	RH7-5345-000CN is the Paper Feed Clutch
HP LaserJet 5100 service manual Item 10, page 270	RH7-5346-000CN described as "Clutch, feed rollers"	RH7-5346-000CN is the Registration Clutch
In the unlikely event that the firmware DIMM gets damaged or lost, replacement DIMMs are available. We recommend that you add the following part numbers to your service documentation.	none	• Base model: Q2440-67903 • TN/DTN models: Q2451-67903 • Le model (A/P only): Q2449-67912

HP LaserJet 4100mfp updates

New firmware

Firmware datecode 20030322 03.721.0

The latest HP LaserJet 4100mfp printer firmware was released on April 6, 2003. The firmware datecode is 20030322 03.721.0.

The HP LaserJet 4100mfp has remote firmware upgrade (RFU) capability (e.g., Flash firmware). To obtain a new firmware image go to: http://www.hp.com/go/lj4100mfp_firmware. The new firmware image must then be written to the product's hard disk drive. See the README file included with the firmware image for instructions.

You may see the following improvements by updating your 4100mfp firmware:

Note The latest firmware bundle also updates the Analog Fax Accessory firmware to version 01.07 and updates the Copy Processor Board (CPB) firmware to version 4.15.

- Control panel messaging has changed to provide feedback if paper is present in the Automatic Document Feeder (ADF). The message "Document Feeder Loaded" is displayed, and the control panel data LED is illuminated when paper is present in the ADF.
- For copying documents, the adjustment range from light to dark has been increased.
- Corrections have been made to ensure the error messages listed via the Embedded Web Server match those on the product's Event Log page.
- Large print jobs stored on the product's hard disk drive may now be deleted without causing long delays at the control panel.
- The control panel messaging at the completion of a digital send job was confusing (for example, "Number of seconds until the Machine Resets - LOGOFF/RESET"). It is now more intuitive.
- In Job Mode operations, paper size A5 has been included in the options.

- Improvements have been made to the SMTP (e-mail) protocol. The HP LaserJet 4100mfp is now able to respond to multi-line responses from an SMTP server.

Analog Fax Accessory firmware

The Analog Fax Accessory firmware (01.07) provides the following improvements:

- Fax print quality has been improved.
- The default error code of "ff ff ff ff" on the Fax Accessory page (page 3 of the Print Configuration pages) has been eliminated to avoid confusion.
- If a customer wishes to use the product only as a fax device (disabling the embedded digital sending feature), then "Fax" will appear as a top level menu item. Normally if both features are enabled (fax and digital sending), the Fax selection appears as a second level menu item under the first level menu item "Send Options". Disabling the digital send feature requires configuration via the Embedded Web Server. For more information, refer to the white paper "Setting up Fax only or Email only option on the LJ 4100 MFP".

- Previously, if fax jobs were queued up (stored on the product's hard disk drive) waiting to be printed and the product inadvertently lost power (power was interrupted or someone power-cycled the product), the fax jobs would not automatically resume printing after power was restored. Queued jobs now automatically print after power has been restored (after the product regains the READY status).
- With the previous version of the firmware you could not use the asterisk (*) symbol while dialing. The asterisk is now available for use while dialing.
- With the previous version of firmware, if PRINT REPORT under FAX CALL REPORTS in the Configure Device parameters was selected, an error page would be printed when a busy signal was encountered. Additionally, an error page would be printed each time a busy signal was encountered. This has been corrected.
- In the product's CONFIGURE DEVICE menu items, the Fax Output Tray parameter range has been change to say that bins 0 – 9 are available.

ADF best feeding practices

Some customers have experienced paper jams with the HP LaserJet 4100mfp Automatic Document Feeder (ADF). Most of these jams can be avoided by following the feeding practices listed below.

- When loading paper into the ADF, make sure the **paper stack is square and straight** and the **side guides are adjusted** to the width of the page to be copied or scanned.
- **Be patient.** There is about a two-second delay between when the paper is detected in the ADF and when you can press START. This is a design feature to ensure paper is securely positioned and detected by the "document detect" photosensor (PS2). If you press START too quickly, the product assumes you are copying a page from the glass.
- **Do not overload the ADF.** The ADF was designed to hold 30 sheets of 20 lb (75 g/m^2) bond paper. The paper stack should barely touch the bottom of the two triangles on the side guides (see photo).
- If the media to be copied through the ADF was previously folded, **flatten the media** to the best of your ability. Try to remove all wrinkles and folds from the paper.
- If the media to be copied through the ADF was previously stapled, it may be necessary to **fan the corner of the page** where the staple was inserted to prevent the pages from sticking together.

ADF loaded properly

- **Remove any sticky notes or labels** that are affixed to the pages being copied or scanned. If labels have deposited excessive residual adhesive on the paper, it may be necessary to clean the adhesive off the paper before loading it in the ADF.
- Media which has been perforated, 3-hole punched, or removed from a wire-comb or plastic-comb binding may be difficult to feed through the ADF.
- If the media's leading edge is excessively worn or frayed, try **rotating the media 180 degrees** so that the opposite edge is feeding into the ADF.
- If paper is sticking together and is difficult to feed through the ADF, the operating environment may be excessively dry (low humidity). Because paper acclimates to its environment, it can become dry and subject to static electricity.

HP LaserJet 9000mfp updates

New firmware

The HP LaserJet 9000mfp has remote firmware upgrade (RFU) capability (e.g., Flash firmware). To obtain a new firmware image go to: http://www.hp.com/go/lj9000mfp_firmware. The new firmware image must then be written to the product's hard disk drive. See the README file included with the firmware image for instructions.

The following issues are addressed with the 20030322 03.721.0 firmware revision:

- Deleting very large stored jobs from the hard drive may cause the printer to become unusable without a power cycle.
- Multiple page copies scanned through the ADF may have clipped and/or misplaced text throughout the document.
- The light - dark setting on the home screen of the touch-screen control panel has been enhanced to provide more variation.
- When the control panel language is set to German, the printable help pages print in the Danish Language.
- The Skip Page touch-screen control panel numbering scheme used for Book Copy can be confusing. The numbers have been removed to help address this.
- When using Book Mode and the scaling function, the touch-screen control panel image indicating where the image will print on the copy may be wrong. This is dependent on which side of the book is copied.
- After clearing an ADF jam, a 49.2C14 error may display on the touch-screen control panel.
- A portrait copy using the flipped duplexing selection will allow users to select a corner staple when a tray containing letter-sized paper is specified. However, in this configuration, the document will not staple with a corner-oriented staple. The corner staple feature is not supported in this configuration, and the selection was removed from the touch-screen control panel.

- Certain menus that pertain to the accessory output devices may not show as locked when the maximum control panel lock has been set for the product's touch-screen control panel.
- A user-defined paper size selected on the Original screen's Basic tab may switch back to the default Original size during a Job Mode copy job if a two-sided Job Mode copy is made with the flatbed cover open.
- Canceling a Job Mode copy job while the "load tray" message is displayed leaves the Scan Next job mode screen displayed.
- When a tray is designated from the Copy screen as the source for a copy job and the paper type for that tray is then changed with the paper-handling menu, a prompt to load paper in Tray 1 will appear when the copy job is scanned.
- Canceling a job using the Stop button may cause a 49.2E12 error to display on the touch-screen control panel.
- Users can change touch-screen control panel settings but they will have no effect on the output while scanning in Job Mode.

- The embedded Web server event log messaging has been changed so that all paper jam messages do not reference a Tray Jam.
- When a DIMM-based solution from a third-party developer is installed, a print job could contain inaccurate content (e.g., missing graphics or text). Slow data transmission to the printer (e.g., sending the print job to the printer over a 56K modem dial-up connection) could contribute to the likelihood that the errors in content would occur. If these symptoms are seen, HP recommends contacting your third-party solution provider.
- The pop-up message after sending has been enhanced. The new message will read "Current send setting will be cleared in XX seconds. Touch Continue to retain settings".
- Embedded e-mail and multi-line responses; according to the SMTP protocol, after the mail client sends a "HELO (hostname)" to the SMTP server, the server should respond with "250 xxxxx" (where xxxxx can be any text). Since the server is replying with another 220 "Greeting" message, the printer closes the connection. The MFP will not close the connection after receiving another 220 Greeting.

The following table lists the current firmware revisions for all devices included in this firmware bundle (03.721.A).

Device	Firmware revision	Description
2000 sheet input tray (C8531A)	03.36	• Changes have been made to enhance the device's paper-flushing capabilities when there is a paper jam.
Stapler/Stacker (C8085A)	030213	• The second page of a multiple page document may not be stapled. • Multiple printed copies of a multiple page document may not offset when closely following a one-page print job, separator page, or banner page. • When the touch-screen control panel setting has been set to CONTINUE for the OUT OF STAPLES condition and the device runs out of staples, the printer will not continue. • A 13.12.25 jam may be seen after detaching and reattaching the device. • Staples may be placed incorrectly in a print job that follows a staple jam. • Residual paper left in the printer after a jam is now diverted to the face-up bin to help with jam clearing. • When an unexpected paper size is sent to the device, the job will be diverted to the face-up bin to help eliminate a paper jam.
Stacker (C8084A)	030131	• When an unexpected paper size is sent to the device, the job will be diverted to the face-up bin to help eliminate a paper jam. • Residual paper left in the printer after a jam is now diverted to the face up bin to help with jam clearing.
HP Multifunction Finisher (C8088A)	021215	• The touch-screen control panel message indicating that the output bin is full is displayed incorrectly.
Copy Processor Board	4.512 (2.1)	• Hewlett-Packard proprietary.
Analog Fax Accessory (Q1314A)	1.07	• Unsatisfactory fax quality was addressed in this revision. • Fax quality was improved significantly. • The Fax Accessory page displayed an error code "ff ff ff ff ff ff" at a normal condition. This was removed, and now nothing will display under normal conditions. • Previously if the printer was turned off or lost power while a fax job was queued, the job would be lost, but the file would remain on the hard drive. This issue was addressed and now the job is printed once the printer returns to ready status. • Previously, if PRINT REPORT was enabled, an error page would print if a busy signal was encountered. Additionally, an error page would be printed each time a busy signal was encountered. This has been corrected. • Output bin displayed 0-25 possible bins; now the bin displays 0-9 bins available.

HP Color LaserJet 4600 updates

Printer hangs at power-on or 62 error

HP has discovered that the printer may hang during the memory count at power-on or that the control panel may display the 62 NO SYSTEM error when all four 168-pin DIMM slots are filled. This issue appears to be caused by less than optimal firmware DIMM and formatter combinations.

What should I do?

An updated firmware DIMM will be available in late April. A service note will be published at that time. Until then, use this workaround:

1. Remove the DIMM from slot J4 so that one DIMM slot is left open. This will allow the printer to power up. To provide customers with the same amount of memory, send them one DIMM equal to the amount of memory that was installed in both the J3 and J4 slots. For example, if customers had 128 MB DIMMs in slots J3 and J4, send them one 256 MB DIMM (C9653-67901).
2. If replacing the DIMM does not resolve the issue, contact Technical Marketing and a replacement firmware DIMM will be sent to the customer.

Overhead transparency curl and waviness

The leading and trailing edges of overhead transparencies printed on the HP Color LaserJet 4600 series printer may appear either curled or wavy.

What should I do?

First, ensure that customers are using HP Color LaserJet transparencies, part numbers C2934A or C2936A. If customers are not using HP color transparencies, ask them to try them. If the issue appears when using these transparencies, determine whether the output is wavy or curled.

Waviness

Waviness (or rippling) may appear on the surface of a transparency. This waviness does not normally affect image projection.

The exit rollers on the fuser may cause waviness. The exit rollers also work to reduce curl, so without the exit rollers, transparencies and other media types may curl excessively. Consequently, there is no way to reduce or eliminate waviness. In some instances, however, reducing the amount of curl by switching to HP media or updating the dc controller may cause the waviness to be less objectionable to customers (see “Curl”, next).

Although no fix is available, HP is interested in gathering data on this issue. If you have customers concerned about waviness, please collect the following data and escalate the issue.

1. Does the waviness effect the projection? If so, how?
2. What percentage of the customer's overall printing volume involves transparency printing?
3. Does the customer also complain of curl? If so, was the updated dc controller installed? (For more information, see "Curl", below.)
4. Does this issue cause the customer not to purchase or to return the printer? If so, how many purchases were lost?
5. Were sales of other HP products lost due to this issue? What is the impact to future sales?

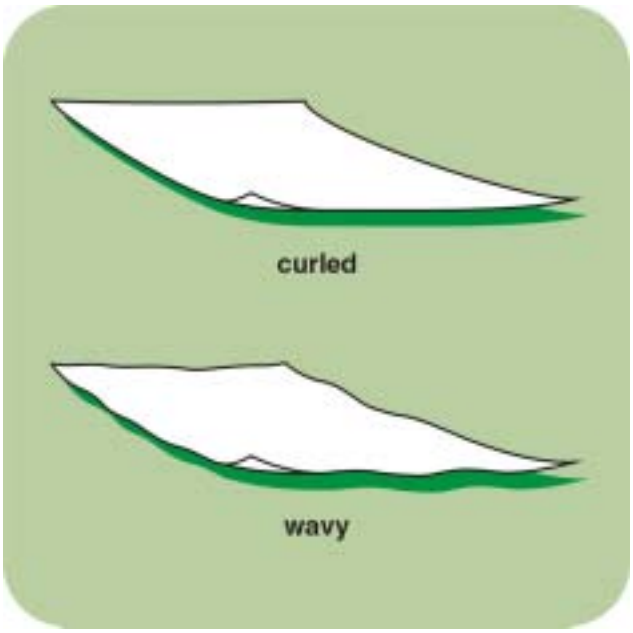
This feedback will be used for future product development. Please let customers know that no fix is available or expected and that HP may or may not contact them regarding this issue.

Curl

Curl can be measured by placing the transparency on a flat surface and measuring the distance from this surface to the edge of the transparency. Curl may cause the projected transparency to appear distorted.

An updated dc controller that will reduce the amount of curl and allow the transparencies to project with less distortion is available. Please use the service note in order to update the dc controller. The new dc controller increases the speed at which transparencies feed to ⅓ engine speed from the previous setting of ¼ speed. Since the inter-page gap (the amount of space between pages in the paper path) is also increased, this does not significantly increase the overall print speed for transparencies.

The part number for the updated dc controller is RG5-6391-070CN. If the dc controller has been updated, the Printer Number on the Configuration Page will be 68 or higher. Printers that were built with this dc controller installed will have a "D" in the third digit of the serial number.



A small number of dc controllers are available to ship to customers who have an immediate need. The escalation process will be used to determine whether one of these dc controllers is needed at a site. Due to the limited quantity of parts, if a large number of printers need to be updated, we may delay the upgrade of all printers until more parts are available.

Please be aware that even with this update the first three or four transparencies printed from a cold start will have more curl than subsequent transparencies. If this curl is unacceptable, suggest that customers print a few pages of regular media first. Once the fuser has warmed up sufficiently, the transparencies will print with very little (3 to 4 mm) of curl. Still, no fix exists that will create transparencies that are completely flat.

In some situations, especially when reflective projectors are used, even small amounts of curl can create some distortion of the projected images. A workaround is to print the transparencies as a reverse image and project them by placing them printed-side down on the projector. However, this feature must be available in the software, since the printer driver does not have a setting for printing reverse images.

Printing primarily black-only pages

This article discusses performance and cost-per-page issues when printing primarily black-only pages with the HP Color LaserJet 4600 series printer.

The HP Color LaserJet 4600 printer has four print cartridges: cyan, magenta, yellow, and black. After printing approximately 8,000 pages at 5 percent coverage with a cyan, yellow, or magenta cartridge, the printer will prompt you to replace that cartridge.

The color print cartridges may need to be replaced more often than customers expect based on the number of color pages printed. This happens because the life of each toner cartridge is dependent not only on toner but also on a photoconductive drum and developer that can wear during the printing process, even when not printing with a particular color.

To conserve the color cartridges, the HP Color LaserJet 4600 employs a mechanism for partially disengaging color cartridges from the printing process in order to prevent wear of the color photoconductive drums and developers during black-only printing. It takes up to six seconds to disengage or engage the color cartridges.

The printer uses this mechanism judiciously, not only for performance reasons, but because disengaging and engaging the cartridges can also affect the life of the drums and developers. Getting the print engine ready for printing and then bringing it to idle (cycling up and cycling down) adds more wear, especially if the color cartridges are fully engaged when the printer cycles down.

Note Because newer firmware has refined this process, encourage customers who print primarily monochrome pages to upgrade to firmware version 3.008.1 or newer.

For firmware version 3.006.0 or earlier

Identify the ratio of black-only to color pages using the configuration page. You can print or view the configuration page through either the control panel or printer administration programs. The configuration page lists the total page count and the number of color pages over the life of the printer. To understand the printer's workload over a given period of days, weeks, or months, print or view the configuration page at the beginning and again at the end of a given period. The page count differences should allow you to compute the ratio for the period.

For most printers with firmware 3.006.0 or earlier, select MOSTLY BLACK PAGES until customer can update firmware.

If customers print more than 65 percent black-only pages, they should select the MOSTLY BLACK PAGES option in the printer's control panel. This option is not recommended when printing more than 35 percent color pages, because with that type of workload, this option may slow performance throughput without optimizing cost-per-page.

The control panel contains two additional options: AUTO and MOSTLY COLOR PAGES. The AUTO option is the factory default setting and is the recommended option for the best cost-per-page and throughput performance for the majority of installations. For that reason, you should use AUTO if you are unsure about the mix of color and black pages printed on your printer.

Note For firmware versions 3.006.0 and earlier, the MOSTLY COLOR PAGES option is the same as the AUTO option.

To select MOSTLY BLACK PAGES:

1. Press ✓ (select).
2. Press ▼ (down arrow) to highlight CONFIGURE DEVICE.
3. Press ✓ (select) to select CONFIGURE DEVICE.
4. Press ▼ (sown arrow) to highlight SYSTEM SETUP.
5. Press ✓ (select) to select SYSTEM SETUP.
6. Press ✓ (select) to select COLOR/BLACK MIX.
7. Press ▼ (down arrow) to highlight MOSTLY BLACK PAGES.
8. Press ✓ (select) to select MOSTLY BLACK PAGES.

If you select MOSTLY BLACK PAGES, you will see pauses for disengaging and engaging color cartridges in the following instances:

- If the first page printed after cycling up is black-only and the printer continues to print without cycling down, the printer will engage the color cartridges at the first page in the print stream that has color content.
- If the printer has been printing pages with color content and the printer continues to print without cycling down, the printer will disengage the color cartridges when there are a sufficient number of consecutive black-only pages (3 - 5 pages) in the print stream to justify the wear of disengagement.
- If the printer has paused to disengage the color cartridges to print black-only pages and the printer continues to print without cycling down, the color cartridges will re-engage at the next page in the print stream that has color content.

The MOSTLY BLACK PAGES option is not cost-effective nor a good performance solution for a printer workload made up almost entirely of three-page jobs that begin with a black-only page followed by two color pages. For this type of workload, it is better to select AUTO (factory default) or MOSTLY COLOR PAGES.

For firmware version 3.008.1 or later

The COLOR/BLACK MIX settings have been refined in order for most customers to take advantage of both the printer's ability to disengage the color cartridges when printing monochrome pages and to maximize the printer's performance throughput.

Firmware version 3.008.1 allows customers to take advantage of color cartridge disengagement by default.

Due to these refinements, use the default setting, which is AUTO. With this setting, the printer will check the first page of a print job. If the first page contains black only, the printer will disengage the color cartridges to conserve the life of the color cartridges. If any subsequent pages contain color, the printer will automatically engage the color cartridges. If the first page contains any color, the printer will engage all four cartridges. The printer will then use an algorithm that looks ahead to determine if the document contains a sufficient number of consecutive black-only pages for the printer to efficiently disengage the color cartridges. If a sufficient number of black-only pages exist, the printer will automatically disengage the color cartridges. If AUTO is selected, all of this is done without user intervention.

The COLOR/BLACK MIX menu contains two other options: MOSTLY COLOR PAGES and MOSTLY BLACK PAGES. The MOSTLY COLOR PAGES option optimizes cost-per-page and throughput for the printer that is printing primarily color pages. This setting is the same as with earlier firmware versions. The MOSTLY BLACK PAGES option is the same as the AUTO option.

What about grayscale print jobs?

If customers select the Print in Grayscale option in the printer driver for a particular print job, the HP Color LaserJet 4600 will disengage the color cartridges for the extent of the print job, regardless of the firmware version or how the printer is configured in the COLOR/BLACK MIX menu.

There is usually no speed penalty with this job option, and cost-per-page is minimized for the duration of the job. The only time customers may see a speed penalty is when queuing grayscale jobs and non-grayscale jobs back to back. In that case, there may be a pause of up to six seconds between jobs.

Grayscale printing tips

Customers may reduce the frequency of color printing by selecting the Print in Grayscale option as the default setting in the printer's driver. This is most effective when customers print through a print server. If Print in Grayscale is the default in the print server driver, print jobs will automatically print in grayscale. Customers can override the Print in Grayscale setting at print time, if desired.

HP Color LaserJet 5500 updates

Printer hangs at power-on or 62 error

HP has discovered that the printer may hang during the memory count at power-on or that the control panel may display the 62 NO SYSTEM error when all four 168-pin DIMM slots are filled. This issue appears to be caused by less than optimal firmware DIMM and formatter combinations.

What should I do?

An updated firmware DIMM will be available in late April. A service note will be published at that time. Until then, use this workaround:

1. Remove the DIMM from slot J4 so that one DIMM slot is left open. This will allow the printer to power up. To provide customers with the same amount of memory, send them one DIMM equal to the amount of memory that was installed in both the J3 and J4 slots. For example, if customers had 128 MB DIMMs in slots J3 and J4, send them one 256 MB DIMM (C9653-67901).
2. If replacing the DIMM does not resolve the issue, contact Technical Marketing and a replacement firmware DIMM will be sent to the customer.

Broken sensor flag on ETB

When opening the transfer unit on the HP Color LaserJet 5500, the white sensor flag on the top left side of the ETB (electrostatic transfer belt) may dislodge. If customers call because they have difficulty closing the ETB, a dislodged flag is the likely cause.

If the ETB is closed without reseating the flag, part of the flag may break off. This flag holds the Calibration Sensor assembly in place.

This photo shows the location of the correctly seated flag.

The flag in this photo is broken.

Rather than being locked in place, the flag can now move freely. A broken flag cannot hold the Calibration Sensor assembly in place, and the printer will not calibrate correctly. In addition, when the flag is broken, the right side of the ETB will begin shifting and rubbing, which will damage it.

The following photos show some of the damage that can be done to the ETB.

This photo shows some minimal damage to the edge of the ETB.

This belt is severely damaged.

What should I do?

If the flag is not broken, instruct the customer to reseat the flag and close the ETB. The printer will operate correctly again.

> ***Warning!***
> *Because the flag is most likely to break when the ETB is opened using only the right handle, rather than both handles, instruct the customer to open the ETB using both handles in the future.*

If the flag is broken, replace the ETB assembly (p/n: C9656-69003). Because the flag alone cannot be replaced, replace the entire assembly, whether or not the assembly is damaged.

Printer driver issues in a mixed OS environment

Note This article is a summary of a more detailed discussion of this issue. For further detail, including links to relevant Microsoft Knowledge Base articles, go to: http://techweb.boi.hp.com/opendocument.asp?Filename=Whitepaper\129533303125000_migration23.pdf.

A number of printer driver issues exist when operating in a mixed operating system environment. These issues must be considered when planning a print server migration from Windows NT 4.0 or Windows 2000 later operating systems. Issues discussed in this article apply to environments that are currently running a mix of Windows NT 4.0 and Windows 2000/XP operating systems on either the server or the client.

Version-2 drivers

With Windows NT 4.0, printer drivers were considered to be in general a class of graphics drivers. Due to the performance requirements of some types of graphics drivers, like display drivers, these drivers executed in kernel mode. A kernel mode process runs in a specially privileged part of the operating system that gives it access to all system resources. Due to the nature of the privileges granted to kernel mode processes, a misbehaving driver can cause serious system stability problems, including operating system crashes. Microsoft refers to these kernel mode printer drivers as Version-2 drivers.

Version-3 drivers

In an effort to increase operating system stability, Microsoft determined that starting with Windows 2000 and continuing with all future operating systems, printer drivers would run as user mode processes. User mode drivers execute in a protected part of the operating system just like all normal end user processes and applications. This protected part of the operating system restricts access to critical system resources to prevent processes from corrupting these resources, which results in an increase in overall operating system stability. A user mode printer driver that misbehaves is only capable of crashing the process in which it is running but won't crash the whole operating system. Microsoft refers to user mode printer drivers as version-3 drivers.

Version-3 printer drivers are the native or preferred printer driver for Windows 2000, XP, and 2003 Server. However, all of these operating systems are also capable of running version-2 printer drivers, while Windows NT 4.0 is only capable of running version-2 printer drivers. In fact, many older Windows NT 4.0 version-2 printer drivers are blocked in Windows 2000, XP, and 2003 Server because they are known to cause stability problems with these newer operating systems.

Point and Print in a mixed OS environment

With Point and Print, the print queue configuration is stored on, and managed from, the print server. Client computers get the print queue configuration and the printer driver from the print server. Changes to the printer driver on the server, or its configuration, are automatically replicated to the client.

In a homogenous operating system environment (all clients and servers are running the same operating system), the printer driver that is vended from the server to the clients in a Point and Print environment is the same printer driver that is running and controlling the print queue configuration on the server. In this case, the client computer can correctly interpret the print queue configuration and printing will behave as expected.

However, in a mixed operating system environment, there are situations in which client computers could be running a different version of the printer driver than the one that is running on the print server. In order for this situation to work properly, the printer driver that is running on the client must be capable of correctly interpreting the configuration that was created by the printer driver running on the print server.

Symptoms of driver incompatibility

There is not a single set of symptoms which can be seen when client and server printer drivers are different and not compatible in this way, but common symptoms include clients not being able to see the proper queue configuration with respect to installed device options and default settings. Other problems can include the inability to print in landscape or print from a specific paper tray.

When an incompatible mix of version-2 and -3 printer drivers is present in the environment, unexpected problems can occur due to some of the more subtle behaviors of Point and Print. For example, a user with a laptop computer running Windows 2000 typically prints using a Windows NT 4.0 print server that contains only the version-2 driver. The printer driver on the laptop is identified as, for example, "HP LaserJet 4000 Series PCL 6".

Both the client and the server are running the same version-2 driver, so there are no incompatibility issues. However, now the user takes a business trip to a remote site and connects to a shared printer of the same model. The server for this shared printer has migrated to Windows 2000 and contains a version-3 driver also named "HP LaserJet 4000 Series PCL 6". The client computer already has a printer driver named "HP LaserJet 4000 Series PCL 6", but it is a version-2 driver. Windows 2000 prefers to use a version-3 printer driver when it is available.

In this case, because the print server at the remote site has a matching driver, which is version-3, the Windows 2000 client will download this version-3 driver and will use it to print. Once the user returns to the home office and tries to print, problems will occur because the printer driver on the client is not the same as that on the server, and the two printer drivers are incompatible.

What can I do?

There are three different strategies for being able to support Point and Print in a mixed operating system environment. These strategies are not necessarily mutually exclusive but can in some cases be combined or partially used concurrently to ensure that all client computers are served with a supportable printer driver configuration.

Strategy #1: Isolate Windows NT 4.0

In this approach, avoid printer driver compatibility issues altogether by isolating the Windows NT 4.0 clients and servers, from newer Operating Systems, thus running a dual printing environment temporarily. This approach insures that the print servers and clients are always running the same correct printer drivers, thus avoiding any incompatibilities that may exist otherwise.

Strategy #2: Use Windows NT 4.0 drivers to support all clients

Since Windows 2000, XP, and 2003 Server are capable of running Version-2 printer drivers, a simple approach might be to use Version-2 printer drivers to support all servers and clients. In this way Version-2 and -3 printer driver compatibility issues are avoided because only Version-2 printer drivers are deployed in the solution. In fact, this is the recommendation Microsoft makes if driver incompatibility issues arise.

In general, this is a safe recommendation to make for Version-2 Postscript printer drivers that are based on Microsoft's Pscript driver core. However, great caution must be mentioned here because, while HP's version-2 PCL drivers are compatible with Windows 2000, they are not all compatible with Windows XP or Windows 2003 Server. In addition, because of the restriction above for version-2 PCL printer drivers, not all printer products and page description languages can be supported. Another disadvantage of this strategy is the inherent risk associated with running version-2 printer drivers. Finally, many older version-2 printer drivers cannot be used with this strategy because they have been determined to be incompatible with Windows 2000, XP, and/or 2003 Server and are blocked from installation by those operating systems.

Strategy #3: Use a mix of version-2 and -3 drivers support all clients

Install all of the version-2 and version-3 printer drivers on the print server that are necessary to support a mixed client. As mentioned previously, these printer drivers must be compatible with one another in such a way that they store the driver configuration in a format that is common to both drivers. HP has compatible printer driver pairs available for most printers and page description languages.

What drivers do I have installed?

To determine which versions of a particular printer driver are installed on a computer, open the printer **Properties** dialog for a printer that uses that driver, click the **Sharing** tab, and then click the **Additional Drivers** button. Printer drivers listed with a check mark in the Environment column are installed on this computer. Printer drivers listed as "Windows NT 4.0" or "Windows NT 4.0 or 2000" are version-2 printer drivers. Those listed as "Windows 2000," "Windows 2000 or XP" or "Windows 2000, XP, or 2003 Server" are version-3 printer drivers.

Again, the Additional Drivers dialog will show which printer drivers are installed for a particular print queue. To determine which types of printer drivers are installed for all printer drivers, open the **Server Properties** dialog from the **Printers** folder (**File** -> **Server Properties**) and click the **Drivers** tab. The Server Properties lists the printer driver names along with the Environment and Version information. Windows NT 4.0 does not have a Drivers tab in its Server Properties dialog. Information about installed printer drivers can be obtained on Windows NT 4.0 by examining the following registry keys (for Intel x86 architectures).

- HKLM\System\CurrentControlSet\Control\Print\Environments\Windows NT x86\Version-2
- HKLM\System\CurrentControlSet\Control\Print\Environments\Windows NT x86\Version-3

Compatible drivers

The following tables describe the printers and specific printer driver versions that can be installed together on a server in this manner.

Note If a printer series is not listed in the following tables, then there are no compatible drivers available for that particular printer series.

Compatible PCL 6 drivers

Printer	PCL 6
LaserJet 1200/1220	4.3.2.208
LaserJet 2100	4.3.2.201
LaserJet 2200	4.3.2.192
LaserJet 3200	4.3.2.208
LaserJet 3300	4.19.3300.3
LaserJet 4000	4.3.2.201
LaserJet 4050	4.3.2.201
LaserJet 4100	4.20.4100.420
LaserJet 4200	<see note below>
LaserJet 4300	<see note below >
LaserJet 5000	4.3.2.201
LaserJet 5100	4.20.5100.430
LaserJet 8000	4.3.2.201
LaserJet 8100	4.3.2.201
LaserJet 8150	4.3.2.207
LaserJet 9000	4.20.9000.430
Color LaserJet 2500	4.14.0.18
Color LaserJet 4500	4.3.2.201
Color LaserJet 4550	4.3.2.207
Color LaserJet 4600	4.20.4600.430
Color LaserJet 5500	4.18.5500.420

Note There are compatible PCL 6 and PCL 5 drivers available for these printers at: http://www.hp.com/pond/pnp.

Compatible PCL 5 drivers

Printer	PCL 5
LaserJet 1100	4.3.2.201
LaserJet 1200/1220	4.3.2.208
LaserJet 2100	4.3.2.201
LaserJet 2200	4.3.2.192
LaserJet 3200	4.3.2.208
LaserJet 3300	4.19.3300.3
LaserJet 4	4.3.2.200
LaserJet 4 plus	4.3.2.200
LaserJet 4si	4.3.2.200
LaserJet 4V	4.3.2.200
LaserJet 4000	4.3.2.201
LaserJet 4050	4.3.2.201
LaserJet 4100	4.20.4100.420
LaserJet 4200	<see note below >
LaserJet 4300	<see note below >
LaserJet 5	4.3.2.200
LaserJet 5N	4.3.2.200
LaserJet 5si	4.3.2.200
LaserJet 5000	4.3.2.201
LaserJet 5100	4.20.5100.430
LaserJet 8000	4.3.2.201
LaserJet 8100	4.3.2.201
LaserJet 8150	4.3.2.207
LaserJet 9000	4.20.9000.430
Color LaserJet 2500	4.14.0.18
Color LaserJet 4500	4.3.2.201
Color LaserJet 4550	4.3.2.207
Color LaserJet 4600	4.20.4600.430
Color LaserJet 5500	4.18.5500.420
Color LaserJet 8550	4.3.2.201

Compatible PostScript drivers

Note If a printer series is not listed in this table, then there are no compatible drivers available for that particular printer series.

Printer	Pscript[4]	PScript4[5]	PScript5[6]
LaserJet 1200/1220	4.3.2.172		4.3.2.172
LaserJet 2100	1.0		
LaserJet 2200		2.0.0.0	2.0.0.0
LaserJet 3300	4.13.3300		4.13.3300
LaserJet 4	1.0		02.12.01
LaserJet 4 plus	1.0		02.12.01
LaserJet 4si	1.0 0		2.12.01
LaserJet 4V	1.0 0		2.12.01
LaserJet 4000	4.0		
LaserJet 4050	4.0_1.30		
LaserJet 4100		3.0.8	3.0.8
LaserJet 5	4.0		02.12.01
LaserJet 5N	4.0 0		2.12.01
LaserJet 5si	4.0 0		2.12.01
LaserJet 5000	4.0		
LaserJet 5100		1.0.0.0	1.0.0.0
LaserJet 8000	4.00		
LaserJet 8100	4.00		
LaserJet 8150		2.0.5	2.0.5
LaserJet 9000		2.0.14	2.0.14
Color LaserJet 2500		1.0.0.0	1.0.0.0
Color LaserJet 4500	4.1.1		
Color LaserJet 4550		5.00.2195.2307	5.00.2195.2307
Color LaserJet 4600		1.0.0.0	1.0.0.0
Color LaserJet 5500		2.0.0.0	60.03.14.02

[4] Postscript drivers under PScript and PScript4 are kernel mode drivers

[5] Postscript drivers under PScript are compatible on Windows NT and 2000 only

[6] Postscript drivers under PScript4 can co-exist with PScript5 and they are compatible with Windows NT 4.0, 2000, and XP